



**US Army Corps
of Engineers®**
Rock Island District

LOCK & DAM 13 (FULTON, ILLINOIS) MISSISSIPPI RIVER

General Contractors:

Lock and Dam: McCarthy Improvement Company, Davenport, Iowa

Construction: 1935-1939

Congressional Districts: IA-1; IL-16

DESCRIPTION

Lock and Dam 13 is 522.5 miles above the confluence of the Mississippi and Ohio rivers. The complex stretches across the river at a point where the bluffs on the Iowa side are very close to the river; islands and chutes dot the river beneath the bluffs. Eagle Point Nature Center occupies the high bluff immediately above the lock and dam. A dense group of sloughs and islands extend out from the Illinois shore.

The movable dam consists of 10 submersible Tainter gates, 20-feet high and 64-feet long; and 3 submersible roller gates, 20-feet high and 100-feet long. The Tainter gates are elliptical. The dam system also includes three non-overflow earth and sand-filled dikes; two transitional dikes; and a submersible earth and sand-filled dike.

The lock dimensions are 110 by 600 feet with additional provisions for an auxiliary lock. Lock lift is 11 feet. Normal upper pool elevation is 583 feet, about 17 feet above the tail waters below the dam at low water. The maximum lift is 11 feet with an average lift of 8.6 feet. It takes approximately 10 minutes to fill or empty the lock chamber. It takes 10 hours for water to travel from Lock and Dam 12, in Bellevue, Iowa, to Lock and Dam 13.

HISTORY/SIGNIFICANCE

The Lock opened in 1939. Locks and Dams 13, 14 and 17 were designed and built concurrently. The site for the lock was inaccessible from the nearest highway. As a result, the general contractor constructed a dike road to the site through the sloughs, islands, and marshy bottom lands of the Illinois shore. A ferry had to be operated during the construction of the dam and central control station. It was also necessary to divert Johnson Creek so that it entered the river downstream from the lock site. The lock and dam elements of the complex were completed at a cost of \$7,503,000.

ANNUAL TONNAGE (10-YEAR HISTORICAL)

<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>
1998	21,866,721	2003	19,990,636
1999	24,803,042	2004	17,729,645
2000	22,746,082	2005	18,028,251
2001	19,277,553	2006	19,078,754
2002	23,495,472	2007	18,030,735

(MORE INFORMATION ON THE REVERSE SIDE)

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COMMODITY TONNAGE & LOCKAGES (2007)

Coal	3,985,350	<u>Subtotals:</u>	
Petroleum	401,956		
Chemicals	2,096,384	Grain	8,204,136
Crude Materials	1,974,848	Steel	182,877
Manufactured Goods	655,366		
Farm Products	8,889,453	<u>Lockages:</u>	
Manufactured Machinery	24,254		
Containers & Pallets	1,624	Boats:	3,941
Unknown	1,500	Cuts:	3,903

CURRENT MAINTENANCE ISSUES – LOCK & DAM 13

Item (Critical Rank Order)

Repair or Replace Emergency Gates
Systemic Bulkhead Slots
Systemic Miter Gate Replacement
Repair Roller End Shields & Seals - Dam
Central Control Station Flood Proofing
Structural Repairs - Tainter and Roller Gates Exterior
Systemic - Crane Rail Adjustments - Dam
Systemic Tainter Valve Replacement
Lock Checkpost Replacement
Dam Rehabilitation Evaluation Report
Replacing 70-Year Old Lock Pontoon Barge (Work Flats)
Bridge Crane Repairs to Lattice Boom & Crane Undercarriage
Flood Damage - Repair/Raise Entrance Road
New Water Supply Well
Scour Repair at Dam and Riverwall
Systemic - Standby Generator and Compressor Enclosures
New Maintenance Building

TOTAL ESTIMATED COST: \$24,400,000

The existing 9-foot Channel Navigation Project was largely constructed in the 1930's and extends down the Upper Mississippi River from Minneapolis-St. Paul to its confluence with the Ohio River and up the Illinois Waterway to the Thomas J. O'Brien Lock in Chicago. It includes 37 Locks and approximately 1,200 miles of navigable waterway in Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The system's 600-foot locks do not accommodate today's modern tows without splitting and passing through the lock in two operations. This procedure requires uncoupling barges at midpoint which triples lockage times and exposes deckhands to increased accident rates.

More than 580 manufacturing facilities, terminals, and docks ship and receive tonnage in the Upper Mississippi River basin. In 2005, the system moved more than 160 million tons of commercial cargo worth roughly \$28.5 billion. Grains (corn and soybeans) dominate traffic on the system. Other commodities, mainly cement and concrete products, comprise the second largest group. A modern 15-barge tow transports the equivalent of 870 large semi-trucks (22,500 cargo tons, 787,500 bushels, or 6,804,000 gallons). Annually, the project generates an estimated \$1 billion of transportation cost savings compared with the operation and maintenance costs of approximately \$115 million.

In constant dollar terms, operations and maintenance funding for the system has been largely flat or declining for decades, while maintenance needs of the aging infrastructure increase. This is adversely affecting reliability of the system. Long-established programs for preventative maintenance of major lock components have essentially given way to a fix-as-fail strategy, with repairs sometimes requiring weeks or months to complete. Depending on the nature of a lock malfunction, extended repairs can have major consequences for shippers, manufacturers, consumers, and commodities investors.

POINT OF CONTACT

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